

REMARKS/ARGUMENTS

I. Introduction:

Claims 6, 17, 18, 20, 26, 31, 36, 46, 49, 50, 67, 69, 70, 71, 73, 74, 75, 78, 81, and 83 are amended, claims 35, 68, and 76 are canceled, and new claims 85 and 86 are added herein. With entry of this amendment, claims 1-34, 36-67, 69-75, and 77-86 will be pending.

Applicants acknowledge the Examiner's allowance of claims 43-45, 47, and 48, the subject matter of claims 17, 20, 26, 69-71, 73, 74, 78, and 80-83, and the allowance of claims 49-65 if amended to overcome the rejection under 35 U.S.C. 112.

Claims 17, 20, and 26 have been amended to include the limitations of base claim 1 and any intervening claims. Claims 69-71, 73, and 74 have been amended to include the limitations of base claim 67 and any intervening claims. Claim 78, 81, and 83 have been amended to include the limitations of base claim 75. As amended, these claims, and claims depending therefrom, are submitted to be in proper form for allowance.

II. Claim Rejections Under 35 U.S.C. 112:

Claims 18, 31, 32, 35, 36, 46, and 49-74 stand rejected under 35 U.S.C. 112, second paragraph.

Claims 18 and 46 have been amended to specify that electronic components are coupled to the libraries or samples via an electrical feed through connected to the injection module. As discussed at page 35, lines 24-27 of the specification, data may be measured, for example, by coupling a thermister or thermocouple to the sample plate at each of the sample wells or the individual samples themselves via the electrical feed through 79 (see also, Fig. 7a).

Claim 31 has been amended to replace "electric motor" with "motor driven drive system" which has antecedent basis in claim 30.

Claim 35 has been canceled.

Claim 52 specifies a data gathering device coupled to libraries or electronic components for gathering data via an electrical feed through. As discussed above with respect to claims 18 and 46, data may be measured, for example, by coupling a thermister or thermocouple to the sample plate at each of the sample wells or the individual samples themselves via the electrical feed through 79.

Claim 49 has been amended to replace “said housing” with “said first housing”.

Claim 50 has been amended to specify a “first data gathering device”. Therefore, the term “first data gathering device” has proper antecedent basis in claims 53 and 54.

Claim 67 has been amended to specify that the claim is directed to a method for injection of one or more chemical components into a reaction chamber.

In view of the foregoing, all claims are believed to meet the requirements of 35 U.S.C. 112.

III. Claim Rejections Under 35 U.S.C. 102 and 103:

Claims 1-6, 8-14, 16, 18, 19, 24, 25, 27, 29-34, 37, 42, 66-68, 72, 75-77, 79, and 84 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,676,951 (Armes et al.).

Claim 1 is directed to an apparatus for in-situ injection of one or more chemical components into a reaction chamber. The apparatus generally comprises a reaction chamber for receiving one or more libraries, an injection module in fluid communication with the reaction chamber for permitting in-situ injection of one or more chemical components into the reaction chamber, and a selectively movable transport assembly for selectively transporting the one or more libraries between the reaction chamber and the injection module.

Armes et al. disclose an automatic specimen analyzing system for use in microbiology applications. The system includes a plurality of specimen tray supporting towers 11 and a work station 12 arranged in association with the tray towers for selectively treating or analyzing specimens in trays supported by the towers (Fig. 1). A selectively operable tray moving system is provided to remove a specimen tray from the tower and move it to the work station and

reinsert the tray into the tower. The work station includes a reagent delivery system with a remote dispensing head. A housing H surrounds and encloses the environmentally sensitive elements of the analyzing system. The housing can be used for controlling temperature and humidity to provide proper incubation of the specimen. The system can also be used in a controlled environmental room without a housing. The specimen tray includes a plurality of microcuvettes 19 arranged in a grid pattern (Fig. 5). When the specimen tray is positioned within the tower, a cover 20 is seated over a top surface of the tray. The cover insures that there is no undue evaporation of the contents of the curvature in the tray.

In rejecting claim 1, the Examiner defines the tower contained within the housing as a reaction chamber and the delivery system 14 as an injection module. However, the delivery system is not in fluid communication with the tower. The delivery system and tower are merely contained within a common environmentally controlled room or housing. There is no fluid path between the delivery system and tower. If the injection module were pressurized, for example, the tower would not be exposed to the same pressure as the injection module since the housing is not configured to sustain any significant pressure. Thus, the two components are not in fluid communication. Furthermore, when the specimen trays are positioned within the tower, each tray is individually sealed to prevent evaporation of the contents of the tray. Thus, the samples which are received in the tower are not in fluid communication with the injection module or any reaction chamber.

Accordingly, claim 1 is submitted as not anticipated by Armes et al. Claims 2-16, 18, 19, 21-25, 27-42, 66, and 85, depending either directly or indirectly from claim 1, are submitted as patentable for the same reasons as claim 1.

Claim 4 is further submitted as patentable over the Armes et al. patent because it does not disclose a first housing which may be selectively moved into sealing engagement with a second housing to form a completely sealed chamber. In rejecting claim 4, the Examiner refers to the housing which surrounds and encloses the environmentally sensitive elements of the system. The housing of Armes et al. is not movable into sealing engagement with a second housing to form a sealed chamber.

Claim 6 has been amended to specify that the material and structure of the reaction chamber is such that the chamber is operable to sustain an operating pressure of at least 60 psi. As discussed above, the housing of Armes et al. simply provides an environmental enclosure and is not designed to sustain any significant pressure.

Claim 67 is directed to a method for injection of one or more chemical components into a reaction chamber. The method generally includes: providing a reaction chamber; loading one or more sample plates into the reaction chamber; sealing the reaction chamber; and transporting the sample plates to an injection module of the reaction chamber for injection of one or more chemical components into the reaction chamber. Claim 67 has been amended to specify that transporting can be carried out under pressure.

Claim 75 is directed to a method of screening one or more material properties or one or more characteristics of reaction of two or more samples. The method generally includes: loading one or more library of samples into a reaction chamber; sealing the reaction chamber; and transporting the library of samples to an injection module for injection of one or more chemical components onto the samples comprising each library. Claim 75 has been amended to specify that transporting can be carried out under pressure.

As previously discussed, the system of Armes et al. does not include a sealed reaction chamber which can operate under pressure. Applicants' invention is particularly advantageous in that active catalysts can be generated after pressure equilibrium has been reached without the need to depressurize the reaction chamber in order to remove and activate the catalyst precursor libraries. The system of Armes et al. is configured to analyze biologic specimens which have been treated and incubated. Armes et al. are not concerned with exposing the samples to pressure, thus there is no reason to transport specimens under pressure. Accordingly, claims 67 and 75 are submitted as patentable over Armes et al. and the other prior art of record. Claims 72 and 84, depending directly from claim 67, and claims 77, 79, and 84, depending either directly or indirectly from claim 75, are submitted as patentable for the same reasons as claim 67 and 75.

New claim 86 is directed to an apparatus for injection of one or more chemical components into a reaction chamber. The apparatus generally comprises: a reaction chamber for receiving one or more libraries; an injection module in sealing engagement and fluid communication with the reaction chamber for permitting injection of chemical components into

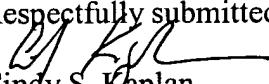
the reaction chamber; and a selectively movable transport assembly for selectively transporting the libraries between the reaction chamber and the injection module. Armes et al. do not show or suggest an injection module in sealing engagement or fluid communication with a reaction chamber.

The additional references cited, including U.S. Patent Nos. 6,036,923 (Laugharn, Jr. et al.), 4,812,392 (Miyake et al.), 3,961,899 (Trivedi et al.), 5,101,764 (Loewenstein et al.), 5,710,381 (Atwood et al.), and 4,735,778 (Maruyama et al.), do not remedy the deficiencies of the primary references.

Laugharn, Jr. et al. is directed to a pressure cycling reactor in which pressure provides precise control over timing and synchronization of chemical reactions, particularly enzymatic reactions. As noted by the Examiner, Armes et al. do not teach the incorporation of a pressure gauge. Armes et al. do note that gages and indicators can be mounted on the housing. However, the housing is simply designed to control temperature and humidity to provide proper incubation of the specimen and is not designed to operate under pressure. Therefore, there is no need to provide a pressure gauge or control valves for controlling pressure of a reaction chamber, as required by claims 7 and 28, respectively.

IV. Conclusion:

In view of the foregoing, reconsideration and allowance of claims 1-34, 36-67, 69-75, and 77-86 are respectfully requested. If the Examiner feels that a telephone conference would in any way expedite prosecution of the application, please do not hesitate to call the undersigned at (408) 446-8695.

Respectfully submitted,

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